Event Risk, Covenants, and Bondholder Returns in Leveraged Buyouts

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Prebuyout bondholders, on average, suffer statistically significant wealth losses in leveraged buyouts. Bonds with strong covenant protection, however, gain value, while those with no protection lose value. The disposition of bonds after buyouts, e.g. remained outstanding, called, tendered, defeased, is also strongly linked to type of covenant protection. We also document that covenant use declines for bonds issued after 1980. Finally, the losses to bondholders are small compared with the gains accruing to shareholders.

I. Introduction and Issues

This paper investigates the returns to prebuyout bondholders in leveraged buyouts (LBOs). These returns show (1) whether such events and their associated increases in leverage decrease bondholders' wealth and (2) how effectively various covenants protect bondholders. This paper also investigates whether bondholder losses are an important source of stockholder gains in LBOs.

The sources of significant wealth increases to prebuyout stockholders in LBOs [see DeAngelo, DeAngelo and Rice (1984), DeAngelo and DeAngelo (1987), Lehn and Poulsen (1988), Kaplan (1989) and Marais, Schipper, and Smith (1989)] have been the subject of considerable research. Real operating improvements in LBOs are documented by Kaplan (1989) and Smith (1989), while Kaplan (1988) and Schipper and Smith (1988) find evidence of reduced corporate taxes. Shleifer and Summers (1988) argue that wealth is transferred from existing employees. A comprehensive investigation of wealth transfers from other securityholders by Marais, Schipper, and Smith (1989) finds no loss for any class of securityholders, including bondholders.

Marais, Schipper, and Smith's finding that existing bondholders do not lose in LBOs is contested by anecdotal evidence in McDaniel(1986, 1988) and the financial press, as well as by Warga and Welch (1990). Furthermore, Jensen and Smith (1985) and Galai and Masulis (1976) predict negative redistribution effects with increasing leverage and Masulis (1980) finds negative bondholder returns in debt-for-equity exchange offers[1]. It is possible, of course, that any redistribution effects in LBOs are canceled by the bondholders' share of any real gains, by transfers from other sources, or by the existence of protective covenants.

This paper's results differ from those of Marais, Schipper, and Smith

(1989). On average, existing bondholders suffer significant losses in LBOs. This result is not universal, however, and covenant protection explains much of the differences in bondholder wealth effects. Bonds with strong covenant protection gain value whereas those with weak or no protection lose value. What happens to bonds after buyouts--whether they remain outstanding, are called, are defeased, or are tendered for--is also strongly linked to the type of covenant protection. Finally, wealth gains and losses to bondholders are small in comparison with the total gains accruing to shareholders in the same LBOs.

These results, besides confirming the existence of wealth redistribution effects and the importance of bond covenants, are also important in light of two recent developments in the public bond market. The first is the introduction of new protective covenants (such as poison puts) in bond indentures to protect bondholders from events such as mergers and leveraged buyouts. The second development, which we document in this paper, is a decline in traditional bond covenants after 1980. Since strong traditional covenants protect bondholders from wealth losses in LBOs, the declining use of such covenants in the 1980s and the introduction of new covenants seem anomalous.

The remainder of the paper is organized as follows: section 2 discusses the data and methodology, section 3 details covenant protection, section 4 presents the results and implications, and section 5 presents conclusions.

II. Sample Selection and Sources of Data

The 214 bonds analyzed here represent all publicly traded, nonconvertible debt securities associated with 65 leveraged buyout targets. The sample of buyout targets is obtained by searching (1) W. T. Grimm's Mergerstat Review; (2) The Merger and Acquisition Sourcebook; and (3) The Yearbook of Mergers Acquisitions and Joint Venture Activity over the years 1980-1988 for buyout announcements.[2]

In addition, announcements are collected using the annual Wall Street Journal Index and the ABI Database of periodical abstracts. Finally, the samples of LBOs used in Kaplan (1989) and Lehn and Poulsen (1988) are cross-checked for additional buyouts.

This sample of buyouts from 1980-1988 is screened by the following selection criteria:

(1) The proposed buyout involves the purchase of the entire equity of a publicly traded firm by a private buyout group or privately held firm, with the intent of taking the target firm private. There were 351 such buyout proposals;

(2) The total equity value of the proposed buyout exceeds $100 million; and

(3) The target firm has at least one outstanding issue of a publicly traded, nonconvertible (and nonusable) debt security issued either by the target itself or by a wholly owned subsidiary.

Sixty-five buyout proposals meet these criteria, and the target firms have 214 outstanding publicly traded debt issues. The total par value of debt outstanding immediately prior to the buyout proposals is $16.4 billion. Of the 65 proposals, 47 result in a successful private buyout by either the original or a subsequent bidder. The 47 targets have 149 public bonds outstanding with a par value of $13.2 billion. Table 1 presents the annual frequency of LBOs, with associated amounts of public debt outstanding. The level of buyout activity increased substantially after 1984.

For each buyout proposal two dates are identified. The first is when the Wall Street Journal (WSJ) reports a going-private buyout proposal. A buyout proposal is not necessarily the first bid for a firm. There may be a previous bid that involves acquiring the firm, usually in a merger with a public firm. The

second date is the day the WSJ reports the LBO bid is resolved, either by a favorable shareholder vote, by an LBO bidder's successful tender offer for the target shares, by a vote favoring a merger with a non-LBO bidding firm, or by the final retraction of all LBO bids.

Monthly prices for each bond are collected from Standard & Poor's Bond Guide. This source reports the last sale price in a calendar month, if available. If not, the last bid price is used. If that is not available, the last ask price or, finally, a monthly desk price is reported. A monthly desk price is the month-end price at which a bond trader says he would trade the bond if it had traded.[3] Monthly bond market indices are collected using the Shearson-Lehman-Hutton Corporate Bond Indexes for both intermediate- and long-term corporate bonds. Original, pre-buyout, and post-buyout credit ratings are collected from the Standard & Poor's Bond Guide.

Indenture covenants used to classify each bond's protection level are taken directly from the issue's prospectus when it is available. Prospectuses were available from Disclosure for 171 of the 214 bonds. In addition, the covenant summaries provided in Moody's Industrial Manuals are collected for all bonds. Moody's is a common source for covenant information, and is the source used by Marais, Schipper, and Smith. Comparing the covenant descriptions in Moody's with the original prospectuses, we found Moody's to be deficient in three ways. First, Moody's coverage is incomplete. It reproduces covenant restrictions in some cases and omits them in others. This is partially because Moody's does not report covenants on bond issues below a minimum dollar amount at issue. Second, Moody's does not report some categories of covenants, such as postmerger net worth restrictions, which can be binding in buyouts. Finally, Moody's was inaccurate in two instances. In total, we found Moody's to be incomplete or incorrect for

36 of the 171 bonds for which we had prospectuses.

Data on prebuyout capital structures were collected from each firm's prebuyout 10K and/or annual report. Post-buyout capital structures for successful buyouts were taken from subsequent 10Q filings or, when 10Qs were not available, from the pro forma capitalization estimates in the buyout proxy statement. Book values are collected for both debt and equity, since only book equity values are available after the buyout.

III. Protective Covenants

Several categories of bond covenants may be violated in a buyout. The most important are (1) restrictions on subsequent financing that limit total debt and new debt of equal and/or higher priority; (2) restrictions on dividend payments that limit cash dividends as a proportion of current and retained earnings, and possibly apply to stock repurchases; and (3) restrictions on merger activity that limit net worth changes in mergers, which may be relevant if the target firm is acquired by a new buyout entity.

If a bond is protected by a covenant that is violated by the buyout, the bonds must be called or repurchased or the bondholder must otherwise be compensated before the buyout can proceed. If a protected bond is trading at a discount, a call or forced repurchase may result in a gain for the bondholders.[4] Unprotected bonds need not be retired or their holders otherwise compensated and thus may lose value in a buyout.

To analyze the effect of covenants on bondholder wealth, we categorize relative bond protection in three ways: strong, weak, and no protection. These classifications are not precise, as we discuss later, but are an attempt to classify ex ante protection. The classification determines only whether the bond is protected by certain covenants. It does not indicate the strength of

individual covenants, such as the level of debt that triggers a violation.

We classify as having strong protection (1) all bonds with a net worth restriction on the surviving firm in a merger, and (2) all bonds that limit total funded debt. For this group of covenants a buyout usually results in a violation, requiring the bond to be retired or its terms improved. We also include under strong protection all bonds secured before the buyout by a mortgage, lien, or defeasance. There should be little wealth redistribution from these bonds.

We classify as having weak protection bonds that have none of the strong protection covenants but have covenants (1) limiting senior funded debt, or (2) restricting dividends or special payouts to shareholders from retained earnings. The type and amount of financing used in the buyout usually determine whether a covenant is violated for this group of bonds. Use of the high-yield subordinated bond market may allow buyouts that don't activate these weak covenants. In addition, most of the payout restrictions contain a ceiling based on the sum of retained earnings since the bond was issued. Thus, for profitable firms, the protection this covenant affords may erode over time.

Finally, bonds classified as having no protection are those with none of the covenants discussed above. These bonds may still have a restriction against issuing additional secured debt, but this restriction offers little protection in practice, since most buyouts are financed by unsecured debt.

Predicting which covenants will be violated is difficult at the buyout announcement. Financing is often unresolved and/or modified up to the time the buyout is completed. Thus a bond may contain a covenant restricting the issuance of senior debt that is violated if the buyout uses such debt but not if it uses subordinated debt. Even if the buyout financing is stipulated at the announcement date, successive bidding by other parties may change the terms. Since the

ultimate type and amount of financing are unknown until the buyout is complete, there is uncertainty at announcement about the eventual outcome for many bonds.

IV. Bondholder Returns

This section examines how bondholder wealth changes with buyouts. Monthly bond returns are calculated using the S&P Bond Guide's monthly prices. Abnormal monthly returns are calculated by subtracting the change in a bond index from the bond returns for the same period. To capture changes in the slope of the yield curve over the measurement period we use two indices. The Shearson-Lehman-Hutton long-term or intermediate-term corporate bond index is matched to each bond according to its time to maturity.

One-month, four-month, and entire-buyout period average abnormal bond returns are calculated. The one-month abnormal returns are for the period from the month-end preceding the buyout announcement until the end of the announcement month. The four-month abnormal return is for the period from the month-end two calendar months preceding an announcement until the month-end two calendar months after the announcement month. The four-month abnormal return may more completely capture the initial market reaction to an event if bonds are infrequently traded. The entire-period abnormal return is for the period from the month-end two months before the announcement until the month end two months after the LBO bid is either successfully completed or withdrawn.

IV.1 All Buyouts: Successful and Unsuccessful

Table 2 gives the one-month, four-month, and entire-period average abnormal bond returns and the percentage of bonds with negative abnormal returns for buyout announcements. The average abnormal returns (in absolute value) reported here are larger than any previously published abnormal bondholder returns. The one-month average abnormal return for the entire sample is -1.1%, the four-month

average abnormal return is -2.2%, and the entire-period abnormal return is -2.0%. The standard errors are .4%, .6%, and .7%. The percentage of bonds with negative abnormal returns is 60.3% for one month abnormal returns and 66.7% for four month abnormal returns. The entire-period negative percentage is 57.4%.

The standard errors reported in the paper are cross-sectional, because the lack of bond prices over long periods makes calculating time-series standard errors impractical. Calculating statistical significance for the abnormal returns is also a problem because many firms have multiple bonds outstanding. This means that many of the bond returns are probably not independent of one another. This problem is addressed later in the paper when results are presented by buyout and not by bond. Finally, the length of the entire period varies from buyout to buyout.

Table 2 shows that covenant protection is important in explaining wealth effects on bondholders of buyout announcements. The average entire-period abnormal returns are +2.6% for strong covenant protection, -0.7% for weak protection, and -5.2% for no protection. Standard errors are 1.1%, 1.6%, and 1.1%. Only 28.6% of the abnormal returns are negative for the strongly protected sample whereas 73.9% are negative for the unprotected sample.

The differences in Table 2 between the entire period and the one-month and four-month abnormal returns for all protection levels highlight the point that the market's initial reaction is not necessarily complete or accurate. At the time of announcement, the abnormal returns are only a probabilistic estimate of the total wealth effect of a buyout. Other information on the bid and on counterbids is released following the announcement. For example, for 14 bonds, the buyout is terminated and a merger announced before the end of the first month. This means that the one-month return of +1.6% for these bonds presumably

reflects the wealth effects associated with the merger and not the announced (and subsequently cancelled) buyout. This problem of incomplete information at announcement suggests that the entire buyout period abnormal returns may more accurately reflect the effect of buyouts and covenant protection on bondholder wealth than the one- or four-month returns.

IV.2 Unsuccessful Buyouts

No buyout is completed for 18 proposals representing 65 bonds. For 53 of these bonds another event occurs; either a merger (13 proposals,35 bonds), a leveraged recapitalization (1 proposal, 7 bonds), or a liquidation of the firm (1 proposal, 11 bonds). The results for these bonds are similar to previous findings on bondholder returns in nonbuyouts. The one-month, four-month and entire-period abnormal returns for this sample are close to zero for most time periods and outcomes except liquidation. The percentage negative follows a similar pattern, with percentages close to 50% for all nonbuyout events and periods. For mergers the entire-period abnormal returns are -0.3% and the percentage negative is 54.8%, similar to the returns reported in Kim and McConnell(1977), Asquith and Kim(1982), and Dennis and McConnell(1988).

IV.3 Successful Buyouts

The initial or a subsequent buyout proposal is completed for 47 target firms representing 149 bonds. The abnormal returns for these bonds are generally slightly larger in absolute value than those reported for the entire sample in Table 2. The one-month, four-month, and entire-period abnormal returns for all bonds in completed buyouts are -1.7% , -3.7%, and -2.8% (standard errors are 0.4%, 0.6%, and 0.8%). The average entire-period returns for strongly protected bonds are +2.1% (standard error 1.7%) and -2.0% and -5.3% for weak and unprotected bonds (standard errors 2.0% and 1.2%). Over the entire-period more than 73%

of the bonds with no covenant protection have negative abnormal returns, whereas only 28% of the strongly protected bonds do. These results strengthen the conclusion that covenant protection has an important impact on bondholders' wealth.

The results for successful buyouts also demonstrate a puzzling reversal of the average abnormal return and percentage negative for strongly protected bonds between the four-month announcement period and the entire period. The four-month abnormal return for 15 strongly protected bonds is -4.6% (80.0% negative) and the entire-period abnormal return is +2.1% (26.7% negative). One possible explanation is that some bondholders do not fully understand their bond's covenant protection and sell immediately after the buyout announcement. In a thin market, which exists for many of the bonds, a few trades could generate the reported returns.

The results above contrast with those presented in Marais, Schipper, and Smith (1989). Their two-day announcement abnormal return is -0.03% and their return from after the announcement until completion is -1.0%. Neither result is statistically significant. Two reasons for the difference from our results seem to be the importance of covenant protection and our larger sample. Marais, Schipper, and Smith, briefly consider covenant protection when determining the disposition of debt after a buyout, but use only one covenant and find no apparent effect for public bonds. They do not subsequently categorize bondholder returns by covenant protection, a distinction our results show is vital. Their sample also consists of fewer bonds, 30 to our 214, and only ten of their bonds are followed until completion in successful buyouts. This is primarily because they evaluate an earlier period (1974-1985) with fewer LBOs.

When we limit our sample to 1980-1985 we obtain the following results: for 48 bonds in successful buyouts the one-month abnormal return is -0.1% (standard error 0.7%), but the four-month and entire-period abnormal returns are -2.8%

(standard error 1.0%) and -3.1% (standard error 1.8%). Thus our results are still large and negative even in the pre-1986 period. Our sample is almost five times as large as the ten bonds in Marais, Schipper, and Smith for the period until completion. Furthermore, the distribution of covenant protection for their sample is uncertain. If half of their ten bonds are strongly protected, this alone could explain their small and insignificant results. Marais, Schipper, and Smith do find that their distribution of returns has an unusually high variance, a result consistent with our findings on different covenants.

Warga and Welch (1990) also examine abnormal returns to bondholders in buyouts and find one-month and four-month abnormal returns of -1.2% and -6.0% Their study covers the period January 1985 - April 1989. When we limit our sample period to 1985-1988, our one-month and four-month abnormal returns are -2.3% and -3.5%. Again the difference may be due to sample size and covenant protection. Our sample is 103 bonds, whereas Warga and Welch's varies from 43 to 25. Also, we do not know the distribution of covenant protection in their sample since they do not consider covenants.

IV.4 Successful Buyouts: Bond Outcomes

Table 3 presents evidence on the effects of covenant protection on bond outcomes. The 171 bonds for which the prospectuses are available are classified by protection level and by individual covenants. Also included are the outcomes for all bonds in successful buyouts. For example, of the 14 bonds classified as strongly protected, only four (28.6%) were still outstanding after the buyout. Five of the 14 were called, four were tendered for, and one was defeased. For the 36 and 68 bonds classified as weak and not protected, the numbers (percentages) outstanding are 17 (47.2%) and 59 (88.1%). These results, and similar percentages when individual covenants are considered, strongly support the result that

covenant protection affects bond outcomes. Unprotected bonds are much more likely to be left outstanding after a buyout. Together with the abnormal returns reported in Table 2, this is strong evidence that covenant protection, on average, does make a difference.

The results in sections IV.1 - IV.3 and Table 3 also indicate that while covenant protection is important, our definitions of protection levels are not precise. Some strongly protected bonds remain outstanding while some unprotected bonds are called. We classify bonds as having strong or weak protection solely by whether they have a particular type of covenant. Several bonds may have a covenant prohibiting a total level of debt financing (and thus be classified as strongly protected), but each bond's covenant can have a different absolute amount or ratio that triggers violation.

Examining more closely those bonds that seemingly behave counter to their protection level reveals additional information. Of the four bonds that were strongly protected and were not called, tendered for, or otherwise renegotiated, two were associated with buyouts that did not use enough additional debt to violate the total debt covenant. Two others, both issued by Wickes Companies, avoided covenant violation because a new holding company acquired the original operating company and issued new debt at the holding company level. Of the five unprotected bonds that were called, two had a pre-buyout price slightly above the call price and a third had a pre-buyout price above par. The other two had covenants restricting the issuance of new secured debt that were violated when the buyouts used secured bank financing.

Table 4 demonstrates that the market distinguishes between bonds that will remain outstanding and those that will either be retired (through calls or tenders) or receive additional protection (through defeasance, through being

secured by assets, or through renegotiation of the coupon rate.). The four-month and entire-period returns for 96 bonds that remain outstanding are -4.9% and -5.9%, (standard errors 0.7% and 0.9%). For 27 bonds that are called the returns are -0.1% and +5.8%, (standard errors 0.9% and 1.8%). The four-month and entire-period percentages negative are 80.2% and 77.1% for bonds that remain outstanding. The comparable percentages negative for called bonds are 51.9% and 18.5%.

IV.5 Successful Buyouts; One Bond Per Buyout

Multiple bond returns from the same firm may not be independent. This creates problems of statistical inference as well as the possibility that the mean results reported above are biased by a few firms with many outstanding bonds. For example, RJR Nabisco had 20 bonds outstanding before its LBO, the most of any buyout. The average one-month, four-month, and entire-period abnormal returns for these bonds are -6.9%, -9.0%, and -7.3%. One way to correct for the statistical dependence of multiple bonds is to form each buyout's bonds into a portfolio. This is not practical, however, because different bonds in the same buyout can differ in covenant protection. There are twelve such successful buyouts; four with bonds classified as both strong and unprotected, six with bonds classified as weak and unprotected, and two with bonds classified as strong and weak. For the four buyouts with strong and unprotected bonds, all the unprotected bonds have a more negative abnormal return than the strongly protected bonds. The relationships between weak and unprotected bonds and strong and weak protection bonds within the same buyout are mixed.

Another way to calculate independent abnormal returns is to choose only one bond for each buyout. We select the one bond two ways, randomly, and by choosing the outstanding bond with the median time to maturity. Time to maturity should influence the market's reaction to bonds in buyouts, since the price of a bond

about to mature will not be as strongly affected as one with a longer maturity, regardless of the level of covenant protection. The results from choosing one bond randomly from each successful buyout and the results from choosing the outstanding bond with the median time to maturity do not differ in any important way.

The results reported in Table 5 are from the sample with median time to maturity, and they are consistent with those reported above for the entire sample. The one-month, four-month, and entire-period abnormal returns are -1.3%, -3.2% and -4.9%. All these are statistically significant at the 1% level. The results in Table 5 categorized by covenant protection are also consistent with those reported above with entire period abnormal returns of +3.3%, -9.9%, and -7.6% for strong, weak, and no protection. The last two are significant at the 5% level. The percentages negative are 33.3%, 66.7%, and 76.2% for strong, weak, and no protection. This last percentage is significant at the 1% level for a binomial test on percentage of abnormal returns not equal to 50%. Finally, the pairwise t-statistics between strong covenant protection and both weak and no covenant protection are 2.97 and 2.96. These are both significant at the 1% level. The pairwise t-statistic between weak and no protection is 0.54, which is not significant. Thus, these results demonstrate that the returns reported above are not generated by a few buyouts with multiple bonds, and that bonds with strong covenant protection have significantly larger abnormal returns in buyouts than bonds with weak or no protection.[5]

IV.6 Two Ancillary Questions

In addition to the central question of whether covenants protect bondholders in buyouts, there are two ancillary questions. The first is why have new protective covenants, such as poison puts, been introduced. The dramatic

changes in the market for corporate control and in the use of corporate debt in the 1980s were largely unanticipated when older bonds were issued. The possibility of bondholder losses caused by dramatic changes in corporate structure and financing, led Standard and Poor's (S&P) in July 1989 to begin rating public bonds by their covenant protection. These event-risk ratings, however, do not rely only on "traditional covenants" (to use S&P's phrase). Indeed, to receive an E1 or E2 event risk rating, S&P's strongest, a bond must usually contain a poison put covenant, which automatically allows redemption by the bondholders if a significant change in credit rating occurs. New covenants should be needed only if traditional covenants fail to protect bondholders from events like LBOs. The evidence strongly suggests, however, that traditional covenants are effective.

The second ancillary question about covenant protection involves the reduced use of covenants in our sample during the 1980s. Table 6 reports the debt and dividend restrictions by rating and issue date. For example, of the 24 bonds in our sample issued before January 1980 with an original rating of A, 18 have covenants restricting both subsequent financing and dividends. Six bonds have neither covenant. Of the 26 A-rated bonds issued after 1980, three have covenants restricting subsequent financing and four have covenants restricting dividends (two have both covenants). Twenty-one bonds have neither covenant. There are 22 bonds with original BBB ratings issued before 1980; 20 have both financing and dividend covenants, one has only a dividend covenant, and one bond has neither covenant. Of the 15 BBB bonds issued after 1980, seven have both covenants, one has only the dividend covenant, and seven have neither covenant. Given our results, both the introduction of new covenants and the reduction in the use of traditional covenants during the 1980s are anomalous.

IV.7 Stockholder and Bondholder Returns in Successful Buyouts

Abnormal returns for stockholders are calculated for the 47 successful buyouts in the sample by subtracting the change in the Standard & Poor 500 index from the change in stock price of the target firm. The resulting entire-buyout period average abnormal return is 37.9%. The sum of the entire period abnormal equity gain for the 47 target firms is $21,522 million and the corresponding total abnormal loss in value for publicly traded debt is $678 million. The total abnormal losses from preexisting public debt are 3.2% of the total abnormal stockholder gains.

If we assume that the value of total debt, public and private, on the balance sheet falls by a ratio equal to that for the total abnormal loss of the public debtholders, the abnormal loss to debtholders is $1,457 million, or 6.8% of the equity gain. This is probably an upper bound, however, since private debt usually contains stronger covenants than public debt. Further, in only one buyout are the bondholders' losses greater than the equityholders' gains. In fact, for 17 of the 47 successful buyouts the public debtholders gain value over the buyout period. Finally, rank-order correlations between stockholder gains and bondholder losses show no significant relation. Thus, while wealth is redistributed from bondholders to stockholders on average, the effect is small and not universal among buyouts. This implies that debtholder losses are not a principal source of the large gains to stockholders in buyouts.

V. Conclusions

On average leveraged buyouts decrease prebuyout bondholders' wealth. The average entire buyout period return to bondholders of ultimately successful buyouts is -2.8%. This loss is large and is consistent with the view that increases in leverage redistribute wealth away from debtholders. These losses are

not universal, however, and covenant protection affects both bond returns and outcomes. Bonds that contain covenants protecting against leverage increases or reductions in net worth through merger experience abnormal gains. Bonds that do not contain such covenants suffer abnormal losses.

Covenants also have a strong effect on the percentage of the bonds remaining outstanding after a buyout. Protected bonds are more likely than unprotected bonds to be retired (through call or tender), defeased, secured, or renegotiated. These outcomes and returns are related, with called bonds gaining +5.8% and bonds that remain outstanding losing -5.9% in successful buyouts.

Although covenant protection is important to bond returns and outcomes, the exact level of protection in any given buyout is difficult to determine. Even with strong covenant protection, bondholders suffer average abnormal losses in the month of and the four months surrounding the buyout announcement. Given the importance of covenants and the increase in LBOs during the 1980s, it is surprising that the percentage of bonds in our sample without covenants is substantially higher for bonds issued after 1980 than for those issued earlier.

Finally, wealth transfers from bondholders explain only a small fraction of the stockholder gains in buyouts. Bondholders in our sample incur abnormal losses of $678 million in successful buyouts, whereas stockholders earn abnormal gains of $21,522 million. Even if all debt, public and private, suffered similar losses, the total loss to debtholders would be less than 7% of the total gain to stockholders.

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1. Marais, Schipper, and Smith's results are consistent with findings of no bondholder wealth effects for other leverage-increasing events by Dann (1981) for stock repurchases, Handjincolau and Kalay (1984) for dividend increases, Jayarman and Shastri (1988) for specifically designated dividends, and Kim and McConnell (1977) and Asquith and Kim (1982) for leverage-increasing mergers.

2. These sources are not all published over the entire period 1980-1988. Mergerstat Review is available for 1981-1988. The M&A Sourcebook is available for 1983-1988 and the Yearbook is available for 1980-1988.

3. Standard & Poor's does not have sale prices available for each bond in our sample because, for many bonds, the market is too thin to register an uninterrupted series of sales prices. Other data sources investigated for prices were Investors Dealers Digest, and Merrill Lynch's Bloomberg prices. IDD and Merrill Lynch report daily prices but they are largely calculated using matrix pricing, i.e., assuming that the prices of all bonds with similar ratings and maturities change the same amount. This eliminates any bond-price movements brought about by firm specific events. These sources also did not cover as many bonds over as long a period as the Standard and Poor's Bond Guide. Several investment banks also maintain partial databases of bond desk prices. In addition to these databases being less comprehensive than Standard and Poor's, Blume, Keim, and Patel(1989) report a correlation coefficient of 0.92 between prices appearing in the Standard & Poor's Bond Guide and Drexel's and Salomon Brother's quoted desk prices for a broad sample of bonds. Finally, Standard and Poor's codes whether its prices are sale prices; the empirical tests reported below were also run using only sales prices without significant changes in the size or direction of the results.

4. Of the 27 bonds called in our sample, only three had a price above the call price at the month end prior to the buyout announcement. Furthermore, these prices did not exceed the call price by much. The largest difference was a Cox Communication bond priced at 102.75 with a call price of 101.00.

5. We also regressed the entire-period abnormal return against years to maturity and dummies for levels of covenant protection, with separate dummies for each firm. The firm dummies should capture firm-specific effects. In the regression the coefficient for years to maturity was negative and significant at the 5% level. The coefficient for strong covenant protection was positive and significant at the 10% level. The coefficient for weak covenant protection was positive and insignificant.

Table 1

Total and Successful Leveraged Buyout Proposals, Associated Nonconvertible Public Bonds, and Par Amount Outstanding by Year from 1980 to 1988.

Year	Number of LBO Proposals[a]	Number of Bonds	Par Amount of Debt Outstanding (Millions $)	Successful LBOs	Number of Bonds	Par Amount of Debt Outstanding (Millions $)
1980	2	15	823	1	13	723
1981	2	9	376	1	5	247
1982	3	5	108	2	3	57
1983	4	11	532	2	2	77
1984	10	32	1,376	7	14	512
1985	8	23	1,241	5	13	487
1986	10	21	995	9	20	963
1987	13	42	2,778	10	32	2,381
1988	13	56	8,124	10	47	7,768
TOTAL	65	214	16,353	47	149	13,215

[a] To be included an LBO proposal must exceed $100 million in equity value and have publicly traded nonconvertible debt outstanding.

Table 2

One-Month, Four-Month and Entire-Period[a] Average Abnormal Bond Returns[b] and Standard Errors at Buyout Announcements by Amount of Covenant Protection for the Complete Sample of Existing 214 Bonds.

	One-Month Avg. Abnormal Bond Returns	Standard Error	N (%<0)	Four-Month Avg. Abnormal Bond Returns	Standard Error	N (%<0)	Entire-Period Avg. Abnormal Bond Return	Standard Error	N (%<0)
All Bonds	-1.1%	0.4%	199[c](60.3)	-2.2%	0.6%	198[c](66.7)	-2.0%	0.7%	183[c](57.4)
Strong Covenant[d] Protection	-0.1%	0.7%	29[c](58.6)	-1.0%	1.2%	29[c](58.6)	+2.6%	1.1%	28[c](28.6)
Weak Covenant[d] Protection	-0.3%	0.6%	60[c](55.0)	-0.5%	1.3%	60[c](60.0)	-0.7%	1.6%	50[c](48.0)
No Covenant[d] Protection	-2.6%	0.6%	70[c](71.4)	-4.0%	0.7%	70[c](72.9)	-5.2%	1.1%	69[c](73.9)

[a] One-month abnormal returns are calculated from the month end preceding a buyout announcement to the month end following it. Four-month abnormal returns are calculated from the month end two months preceding a buyout announcement to the end of the second month following the announcement. Entire-period abnormal returns are calculated from the month end two months preceding a buyout announcement to the end of the second month following the announcement of its completion or cancellation. For example, if the announcement is January 10, the one-month abnormal return is calculated from Dec. 31 to Jan 31. The four-month abnormal return is calculated from Nov. 30 until March 31.

[b] Monthly abnormal returns are calculated by subtracting the change in the maturity matched Shearson-Lehman-Hutton corporate bond index from the monthly bond returns using Standard & Poor's Bond Guide.

[c] The totals do not equal 214 for any period because prices were missing for some bonds. The sum of the totals for covenant protection does not equal the total for all bonds because the prospectuses were not available for 43 bonds.

[d] Bonds are classified as having strong covenant protection if they have (a) a net worth restriction on the surviving firm in a merger or (b) a limit on total funded debt or (c) a mortgage, lien, or defeasance before the buyout. Bonds are classified as having weak covenant protection if they have (a) a limit on senior funded debt or (b) a restriction on dividends or special payouts from retained earnings. Bonds are classified as having no covenant protection if they have none of the above covenants.

Table 4

One-Month, Four-Month and Entire-Period[a] Average Abnormal Returns[b] and Standard Errors by Eventual Disposition of the Bond in Successful Buyouts in the Period 1980-1988.

	One-Month Avg. Abnormal Bond Returns	Standard Error	N (%<0)	Four-Month Avg. Abnormal Bond Returns	Standard Error	N (%<0)	Entire-Period Avg. Abnormal Bond Return	Standard Error	N (%<0)
All Bonds	-1.7%	0.4%	138(63.0)	-3.7%	0.6%	138(72.5)	-2.8%	0.8%	137(61.3)
Still Outstanding	-2.4%	0.5%	96[c](69.8)	-4.9%	0.7%	96[c](80.2)	-5.9%	0.9%	96[c](77.1)
Called	-0.9%	0.6%	27[c](48.1)	-0.1%	0.9%	27[c](51.9)	+5.8%	1.8%	27[c](18.5)
Tender Offer to Repurchase Bonds	+2.5%	2.5%	6[c](33.3)	-7.9%	2.9%	6[c](83.3)	+2.7%	1.4%	6[c](16.7)
Secured, Defeased, or Renegotiated	+0.7%	1.8%	8[c](62.5)	+1.7%	2.1%	8[c](50.0)	+1.1%	3.4%	8[c](50.0)

[a] One-month abnormal returns are calculated from the month end preceding a buyout announcement to the month end following it. Four-month abnormal returns are calculated from the month end two months preceding a buyout announcement to the end of the month following the announcement. Entire-period abnormal returns are calculated from the month end two months preceding a buyout announcement to the end of the second month following the announcement of its completion or cancellation. For example, if the announcement is January 10, the one-month abnormal return is calculated from Dec. 31 to Jan 31. The four-month abnormal return is calculated from Nov. 30 until March 31.

[b] Monthly abnormal returns are calculated by subtracting the change in in the maturity matched Sherson-Lehman-Hutton corporate bond index from the monthly bond returns calculated using Standard & Poor's Guide.

[c] The sum of the totals for covenant protection does not equal the total for all bonds because the prospectuses were not available for 43 bonds.

Table 5

One-Month, Four-Month and Entire-Period [a] Average Abnormal Bond Returns and t-statistics for Successful Buyout Announcements by Amount of Covenant Protection for the Sample of the One Bond with Median Time to Maturity in Each Buyout in the Period 1980-1988

	One Month Avg. Abnormal Bond Returns	t-statistic	N (%<0)	Four Month Avg. Abnormal Bond Returns	t-statistic	N (%<0)	Entire Period Avg. Abnormal Bond Return	t-statistic	N (%<0)
All Bonds	-1.3%	-2.45**	46[c](71.7)***	-3.2%	-3.81***	46[c](71.7)***	-4.9%	-2.68***	46[c](60.9)
Strong Covenant[d] Protection	-1.1%	-1.27	9[c](66.7)	-1.9%	-1.68	9[c](77.8)	+3.3%	+1.36	9[c](33.3)
Weak Covenant[d] Protection	-1.4%	-1.31	12[c](83.3)*	-3.9%	-1.65	12[c](66.7)	-9.9%	-2.66**	12[c](66.7)
No Covenant[d] Protection	-2.2%	-3.15***	21[c](81.0)***	-3.8%	-3.35***	21[c](81.0)***	-7.4%	-2.76**	21[c](76.2)***

[a] One-month abnormal returns are calculated from the month end preceding a buyout announcement to the month end following it. Four-month abnormal returns are calculated from the month end two months preceding a buyout announcement to the end of the second month following the announcement. Entire-period abnormal returns are calculated from the month end two months preceding a buyout announcement to the end of the second month following the announcement of its completion or cancellation. For example, if the announcement is January 10, the one-month abnormal return is calculated from Dec. 31 to Jan 31. The four-month abnormal return is calculated from Nov. 30 until March 31.

[b] Monthly abnormal returns are calculated by subtracting the change in the maturity matched Shearson-Lehman-Hutton's corporate bond index from the monthly bond returns calculated using Standard & Poor's Bond Guide.

[c] The sum of the totals for covenant protection does not equal the total for all bonds because the prospectuses were not available for 43 bonds.

[d] Bonds are classified as having strong covenant protection if they have (a) a net worth restriction on the surviving firm in a merger or (b) a limit on total funded debt or (c) a mortgage, lien, or defeasance before the buyout. Bonds are classified as having weak covenant protection if they have (a) a limit on senior funded debt or (b) a restriction on dividends or special payouts from retained earnings. Bonds are classified as having no covenant protection if they have none of the above covenants.

* Significant at the 10% level for either the t-statistic or the binomial test percentage of abnormal returns ≠ 50%.
** Significant at the 5% level for either the t-statistic or the binomial test percentage of abnormal returns ≠ 50%.
*** Significant at the 1% level for either the t-statistic or the binomial test percentage of abnormal returns ≠ 50%..

Table 6

Covenant Protection of Pre-Buyout Corporate Bonds
By Initial Rating[a] for Bonds Issued Before and After 1980.

Covenant Restrictions on Subsequent Debt Financing and Subsequent Dividends	Number and % of Total Bonds By Initial Rating and Issue Period					
	A Rating		BBB Rating		BB Rating	
	Issued Before 1/1980	Issued After 1/1980	Issued Before 1/1980	Issued After 1/1980	Issued Before 1/1980	Issued After 1/1980
Both	18 (75%)	2 (8%)	20 (91%)	7 (47%)	4 (67%)	5 (31%)
Debt Financing Only	0 (0%)	1 (3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Dividends Only	0 (0%)	2 (8%)	1 (5%)	1 (7%)	1 (17%)	7 (44%)
Neither	6 (25%)	21 (81%)	1 (5%)	7 (47%)	1 (17%)	4 (25%)
Total	24 (100%)	26 (100%)	22 (100%)	15 (100%)	6 (100%)	16 (100%)

[a] No bonds with intial ratings of AA and AAA had covenant restrictions on debt or dividends in either the pre- or post-1980 period. Very few bonds with initial ratings categories below BB were issued before 1980.